

ABSTRACT

A method and apparatus for parsing signomial and geometric programs, referred to herein as “the Parser”. Signomial and Geometric programming is a unique class of mathematical problems that is useful in the study of optimization problems. The Parser is a program designed to recognize and parse both signomial and geometric programs such that they may be accepted and solved by signomial and geometric program solvers. The Parser accepts an optimization problem from a user in the form of algebraic expressions. The Parser can then identify the problem as a signomial program and can further determine if it reduces to a geometric program. If either a signomial or geometric program exists, the Parser converts the algebraic expressions to a compact numeric format that can be accepted by a computer-aided solver. In the case of a geometric program, the solver may find a global solution to the optimization problem. However, in the case of signomial program, the solver may only find a local solution. The solution found by the solver is routed back to the Parser which reports it in a user-readable format.